



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ARCHEOLOGY AND ETHNOLOGY.¹

The International Congress of Anthropology and Pre-historic Archeology of Paris, 1889.—(*Continued from page 395.*)

II.—*Second Question* : “The Periodicity of Glacial Phenomena.”

Mr. Geikie’s paper had been read earlier in the session.

Marquis de Saporta opposed the theories of Mr. Geikie. He saw no evidence in the fossil flora of a periodic return of the cold climate. The periodicity of this phenomena, according to his idea, only showed the oscillations. “There is,” he said, “in all this a mass of concordant facts which we are at this time far from being able to understand or analyze.” He doubted whether the learning of the geologists had served to elucidate the question in any degree.

Le Docteur Garrigou presented a memoir by which he sought to establish the multiplicity of glacial movements in the Pyrenees.

Monsieur Marcellin Boule said it was necessary that the savants of all countries should make study of this question, and bring closer together and face to face the accurate evidence of detailed facts which were necessary to solve the problem. In his opinion the Glacial epoch had commenced at least as early as the Pliocene; that it was not localized, nor did it belong to the end of the Plistocene. The glaciers had successively covered and abandoned, and again recovered, vast regions, and instead of being continuous were periodic. The question could be solved only in a general fashion, but he desired to put on record his opinion that the question of the glaciers, the cutting and filling of the valleys, and the formation of the caverns all belong together, were but one, must stand or fall together, and any studies made of the one which neglects the other will only be partial, and therefore may be erroneous. His (Boule’s) conclusions regarding the caverns were as follows: 1. That the most ancient deposits are the alluvials of the water which had eroded and made the valleys, and that the antiquity of these deposits was in direct relation to the altitude of the cavern above the valley. 2. That the deposits of the rivers, poor in fossils, are nearly always cut up, carried down, and replaced by new deposits coming from later erosions. 3. That the fossils found in this newer deposit belong to the late Plistocene; those from the earlier Plistocene are rarely found in it; and such as are found are, by reason of the erosion and redepositing, difficult to determine.

¹ Edited by Dr. Thomas Wilson, Smithsonian Institution, Washington, D. C.

Monsieur Gabriel de Mortillet spoke of the glacial phenomena as being divided into two groups: the one at the far north, and the other in the Alps, Pyrenees, etc., in the south. The Alps and glacial phenomena could have been produced by only one cause, that of the increased cold, and this cause would at the same time produce an extension of the glaciers of the north. He might admit the fluctuations, oscillation, retreat and advance, appearance and disappearance of the glaciers, but this was far from admitting a plurality of glacial periods, and was contrary to this idea.

M. Marcellin Boule took up the question and gave a detailed description of European glaciers. After late investigations the epochs of the glaciers of the north and of the Alps could not be separated, and geologists were not in accord in opposing the ancient hypothesis of the Plistocene sea of floating ice. The grand glacier coming down and through Scandinavia had attained to Erzgebirge, where it had deposited erratic blocks *geschicbelehm*. This was followed by a retreat corresponding to the melting and opening of the North and Baltic Seas, during which time was deposited the interglacial alluvium, with a fauna of a warm country. Alluvium deposits of this epoch were so extensive that they measured in Brandenburg alone a surface of 200,000 square miles, German. In the Alps the deposits of interglacial plant at Innsbruck are found at 1,000 metres of altitude, at the very top of the chain of mountains. As for paleontology, M. Boule declared that the stratigraphic facts must dominate, though he doubted the pretended facts of stratigraphy as given by some of the investigators, though he was far from saying that the fauna and flora of the Upper Pliocene, the Plistocene, affected detrimentally or were in opposition to the facts found by stratigraphy. MM. Bleicher and Fliche have just described to the Geologic Society of France a deposit in the northeast of France, in the plants and mollusks demonstrating the alternating epochs of cold and heat.

Third Question: "Art and Industry during the Paleolithic Period—in the Caverns."

Judge Piette, of Angers, who probably headed the list of cavern investigators in France, had displayed at the great exposition his magnificent and extensive collection, principal among which were his late finds in the cavern of Mas d'Azil, on the river Aise, in the Department of Ariège, and so he was entitled par excellence to lead in the discussion. He gave a description of these latest discoveries, the results of three years' continuous labor in Mas d'Azil, and presented his opinions and conclusions deduced from a study and comparison

of the art works of the period. He said that the most ancient pieces of flint were worked in an elegant form ; a perception of the beautiful was evident. There was an extension of art during the Madelenien epoch ; the sculpture first, and engraving afterwards. Each prehistoric station in that country had its particular style or manifestation of art. Along the river Vezere the horses engraved in relief are represented with such enormous heads as to be veritable caricatures. In the Pyrenees, at the Grotte Gourdan and Lortet, numerous beautiful engravings were found. The artists of Lourdes and the Grotte Arudy had invented the volute, the spiral, and different designs which were not encountered at any other place. The sculptors of Mas d'Azil sought out imaginary, apparently mythological beings. Man at that time had the leisure to pursue his own imagination, the opportunity to indulge his love for the beautiful according to the best means that art presented. M. Piette presented different engravings of the reindeer in certain positions and conditions sustaining his theory. He also exhibited the advance sheets of his great work on art during this age, and showed by chromo-lithography the reproduction of a great number of objects engraved and sculptured.

M. Montelius asked if the spiral exhibited by M. Piette as from d'Arudy did not belong to the age of iron ; that it would be so if found in his country.

M. Cartailhac responded on behalf of M. Piette that he had assisted in its find ; that there was no doubt of its authenticity ; that it was made out of the bone of a reindeer, and its contemporaneity with that age was indisputable.

One of the objects presented by M. Piette he declared to be a sphinx or winged quadruped. Le Baron de Baye was surprised that it was found in a deposit of the stone age. But M. Cartailhac responded that it required much imagination to determine or say that it was a sphinx. It was incomplete, and the wings were more than doubtful, and he denied largely the propositions advanced by M. Piette, though praising him for his exceedingly valuable excavations.

M. Gabriel de Mortillet also opposed the hypothesis of M. Piette upon the subject of the demonstration of the reindeer and the horse.

Monsieur Fraipont ranged himself on the side of Mortillet, and he criticized mercilessly the fantastic idea that the artist studied art in the same way that the schools were now conducted at the Academy of Beaux Arts, or in the studios of the great painters of Paris. He declared it to be a common error which substituted for the prehistoric man the cultivated, educated artists of the nineteenth century, making the

primitive man to look at art through his eyes, and to study it with his critical or æsthetic eye, as though the primitive works were to be submitted to the committee for entrance into the great Salon of Paris. He declared this to be not scientific nor even sensible, but to be in the highest degree fantastic; that the sooner it was laid away, and the students and archeologists of to-day come down to common ground, and devote themselves to presentation of the actual facts, the better it would be for the science. He ridiculed the idea put forth by M. Piette that these artists of the paleolithic age made studies and executed sketches of skeletons, whether of man or beast, for the same reason as do our modern artists,—that is, to study the anatomy and be better able to render correctly the form in the flesh. “No,” said he, “the artist of Mas d’Azil copied the heads which may have been skinned or flayed, and the bare bones of the skull or skeleton which he may have had many times before his eyes.”

M. Piette responded. He demanded the proofs that the domestication of the reindeer was impossible without the dog. He declared his belief that the engravings of the woman and the reindeer constituted a true picture, of which we now unhappily have but part. The lines of the two subjects do not penetrate or interfere with each other; the legs of the reindeer, as they cross the picture of the woman, are brusquely interrupted, while the lines depicting the woman continue across. It is the case of the one object being represented behind the other.

Mr. John Evans said the interpretation of a few designs slightly obscure is not sufficient proof that the reindeer and other animals were domesticated. The dog would appear to have been the first animal domesticated, and this was in accordance with logic and reason.

Monsieur Delgado made an elaborate, detailed, and interesting communication upon a series of prehistoric caverns found in Portugal. They had served as habitations and also as burial places. The objects of human industry were of worked flint, arrow, and spear-heads, flasks, pottery, polished stone hatchets, worked bones, ornaments, etc., interspersed with weapons or tools and ornaments of bronze. They were the same race apparently, so far as could be judged from the human remains, as had been found in the south of Portugal and Spain. The skull was dolichocephalic, and the tibia platycnemic.

Question III. had a second part: “The Value of Paleontologic and Archeologic Classifications as Applied to the Plistocene Period.”

Doctor Gosse, of Geneva, presented charts of Lake Geneva showing the various deposits along its banks made during the Plistocene period,

and attempted to show the relations between them and the various ages of man as manifested by the fauna of the mammoth, then of the reindeer, and finally of historic times. He showed a Chelléen instrument coming from a deposit of the time of the mammoth, from one of the highest (altitude) localities.

M. Amerano, Superior of the College of Finalmarini, Liguria, described his discovery at the station occupied by prehistoric man in the cavern of the de la Fée in that neighborhood, and 300 metres above the sea-level and one-and-a-half hours distant. He found in a single day, within the space of four cubic metres, six entire heads of the cave bear, twenty large fragments of others, eighty under jaws, one hundred and ten teeth, etc., representing no fewer than fifteen hundred individuals. There were two human occupations in this cavern; the earliest and lowest contained objects of human industry which Monsieur Reviere thought were similar to those of the most profound depths of the Grottes de Menton. The upper and later was entirely neolithic, with polished stone hatchets, grinding stones, and a piece of copper or bronze.

The Mexican Tonalamatl of the Aubin collection, and the other calendars related to it, have been investigated by Dr. Edward Seler, and described in the "Compte Rendu du Congrès International des Américanistes," seventh session, Berlin, 1888, his illustrated report filling not less than 219 octavo pages. The tonalamatl is a representation of the Mexican astrologic year of 260 days, and exists in several copies, differing considerably from the copy once in the possession of the French collector, Aubin. They represent heads of gods and genii, which are ornamented in various ways with symbols, and arranged in squares. Before we can understand these astrologic calendars we have to discover which god or genius is meant in every instance, and to this task Seler's pages are devoted, for the Spanish texts accompanying the pictures are not always clear enough. The erudition which Seler brings into play is astonishing, and only a close comparison of his interpretation with the published pictures can convey to us an understanding of the astrologic art of the Mexican people. This article is composed in German, as is also another publication of his, "Alt-mexicanische Studien," published in the "Veröffentlichungen aus dem Königl. Museum für Völkerkunde," Vol. I., No. 4, fol., Berlin, 1890. The first of Seler's articles treats learnedly of "A Chapter from the Unpublished Aztec Materials Supplementary to the 'History' of Father Sahagun"; the second deals with "The So-called Sacral Vases of

the Zapotec Indians." These meritorious antiquarian inquiries of the Berlin savant are profusely illustrated with wood-cuts in such manner that the original colors are made apparent from the drawings.—A. S. G.

Huastec Language.—Reliable information upon this language of Eastern Mexico is not easily obtainable. We notice with agreeable surprise that a treatise of considerable extent has just been published by a native of that country, by the Statistical Bureau of Mexico. The title runs as follows: "*Cartilla huasteca con su gramatica, diccionario, y varias reglas para aprender el idioma, etc.*" por Marcelo Alejandre, Mexico, Calle de San Andrés, numero 15, 1890. Quarto, pp. 179." The Huastec language is the northernmost of the Maya dialects, and differs very considerably from all others in the lexicon and in the grammatic portion. This difference is ascribed by linguists to the archaic character of the language, but other causes may also have been at work. The nouns do not inflect for case, but for number only; for the verb the author establishes two conjugations, according to the suffixes which are employed in forming the preterit tense. The personal pronoun is placed separate from the verb. The dictionary, by Lamberto Asiain, contains about 2900 items, and is supplemented by a Spanish-Huastec part. There are two principal dialects of Huastec, the Potosino and the Veracruzano; they are spoken at Tantoyuca, Chontla, Tantima, Amatlan, San Antonio, Tancoco, and are heard sporadically also at Ozuluama, in the state of Vera Cruz, where Alejandre composed his *Cartilla* or elementary manual. The volume concludes with some specimens of conversation and poetry in that language, and makes mention of historic traditions once current among the ancestors of the present Indian population.—A. S. G.

Zapotec Language.—The Licentiate Francisco Belmar, of Oajaca, has composed a juvenile manual for the study of the mountain dialect of the Zapotec, which is spoken in the central parts of the state of Oajaca, Mexico. The thirty pages of the little book are filled with Zapotec words, arranged after the number of syllables which they contain, and with their Spanish definitions; the book concludes with some religious short texts, and although the translation is not added to these, the lexical portion of the *Cartilla*, which was published in Oajaca, 1890 (16mo), will be of service to the students of linguistics at large.—A. S. G.

Mixtec and Mije are two aboriginal nations of Oajaca, Southern Mexico, which have retained their Indian languages in a comparatively

pure condition up to the present epoch. Mixtec is spoken in the western and northern parts of Oajaca, and also in the adjoining portions of the state of Guerrero, and is closely related to the Chuchon, Amusgo, Cuitlatec, and other idiomatic forms of speech heard in these parts. The Mixtec proper is divided into upper and lower Mixtec, the majority of the Pueblos speaking the upper Mixtec, or Mixteco alto. In former times the Pueblos of Tanguitlan and of Tepuzculula were considered to speak the typical and purest form of the upper Mixtec. The Spanish grammar (Arte) of the Dominican father Antonio de los Reyes, printed in 1593, represents the dialect heard at Tepuzculula at that time, and has just been reëdited by Leon Reinisch, at the expense of Count Hyacinthe de Charencey, in the eighteenth volume of the "Actes de la Société Philologique de Paris," 1890, making 93 octavo pages. The prologue which precedes the work (eight pages) contains much that is valuable upon the ethnography and dialects of the Mixteç people.

The same eighteenth volume contains a Confessionario en lengua Mixe, by the Dominican father Augustin de Quintana, also republished at M. de Charencey's expense, and filling 331 pages. It is a reprint from the edition of LaPuebla, Mexico, 1733, and besides the devotional texts embodies a vocabulary of the parts of the human body, the names of relationships, the numerals, and some grammatic information. Mije or Mixe is spoken in the eastern parts of Oajaca State. —A. S. G.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

The National Academy of Sciences met at Washington April 21st. The following papers were read: Further Studies on the Brain of *Limulus polyphemus*; A. S. Packard. On Aërodromics; S. P. Langley. The Solar Corona, an Instance of the Newtonian Potential in the Case of Repulsion; F. H. Bigelow (introduced by S. Newcomb). Report on the Human Bones of the Heminway Collection in the U. S. Army Medical Museum, prepared by Dr. Washington Matthews, U. S. A.; J. S. Billings. Application of Interference Methods to Spectroscopic Measurements; A. A. Michelson. The Corona from Photographs of the Eclipse of January 1st, 1889; H. S. Pritchett (introduced by A. Hall). Stellar Motion Problems; Lewis Boss. Effect of Pressure and Temperature on the Decomposition of